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Notes on the Availability of Single-Channel Seismic-Reflection
Profiles and Side-Scan Sonar Records Collected during June 8-14,
1977 in the Middle Atlantic Shelf Area.

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A cruise aboard the R/V OCEANUS (cruise 027) was completed by the U.S. Geological Survey during June 8-14, 1977 to evaluate the presence, extent, and activity of potentially mobile bedforms on the Middle Atlantic Continental Shelf, eastern United States. Based on information collected by the U.S. Geological Survey during a geophysical survey in 1975, seven sites showing possible bedforms were selected for detailed study (Fig. 1). At each of the seven study areas, single-channel high-resolution seismic profiling and side-scan sonar techniques were used to identify and map the size, distribution, and orientation of the different types of bedforms that were present.

The equipment used on this cruise was an EG&G Uniboom and an Ocean Research Equipment Inc. (ORE) seabed survey system. The Uniboom system consisted of a surface towed transducer powered by an EG&G model 234 energy source which was fired at a 1/2 second interval. The acoustic signal was received on a Delnorte hydrophone and printed on an EPC model 4100 recorder at a 1/4 second sweep rate. Filters were set at 400-4000 Hz. The Uniboom was not operated during the 28 hour period between 1300Z June 10, 1977 and 1700Z June 11, 1977 because seas were too rough for the surface-towed transducer to function properly. An ORE model 1000 integrated seabed survey system was used to collect the side-scan and high-resolution subbottom data. Both sets of data were printed on EPC model 4600 recorders. The 97 kHz side-scan sonar was set to scan 1/8 second (94 m) to each side. The variable frequency subbottom profiler was set mostly at the 3.5 kHz frequency, and was run at a 1/4 second sweep rate. The transducers for this system were towed in a fish 10-20 m above the sea floor. This system was operated continuously during all the surveys, however the data was of better quality during the last three

days of the cruise when the seas were calmer. Table 1 summarizes when the different seismic systems were operating and the number of kilometers of data collected.

Navigation during the geophysical surveys was done by the scientific staff using Loran C. Fixes were recorded on paper at least every 10 minutes, and after the cruise they were digitized and stored on magnetic tape.

Further information concerning the data collected during the R/V OCEANUS 027 cruise can be obtained from the chief scientist, David C. Twichell, U.S. Geological Survey, Office of Marine Geology, Woods Hole, Massachusetts 02543. The original records can be seen and studied at the Data Library, U.S. Geological Survey, Office of Marine Geology, Woods Hole, Massachusetts 02543. Microfilm copies of the seismic-reflection and side-scan sonar records collected during this cruise ~~are~~ ^{company} this report, and can be purchased from the National Geophysical and Solar Terrestrial Data Center EDS/NOAA, Boulder, Colorado 80302.

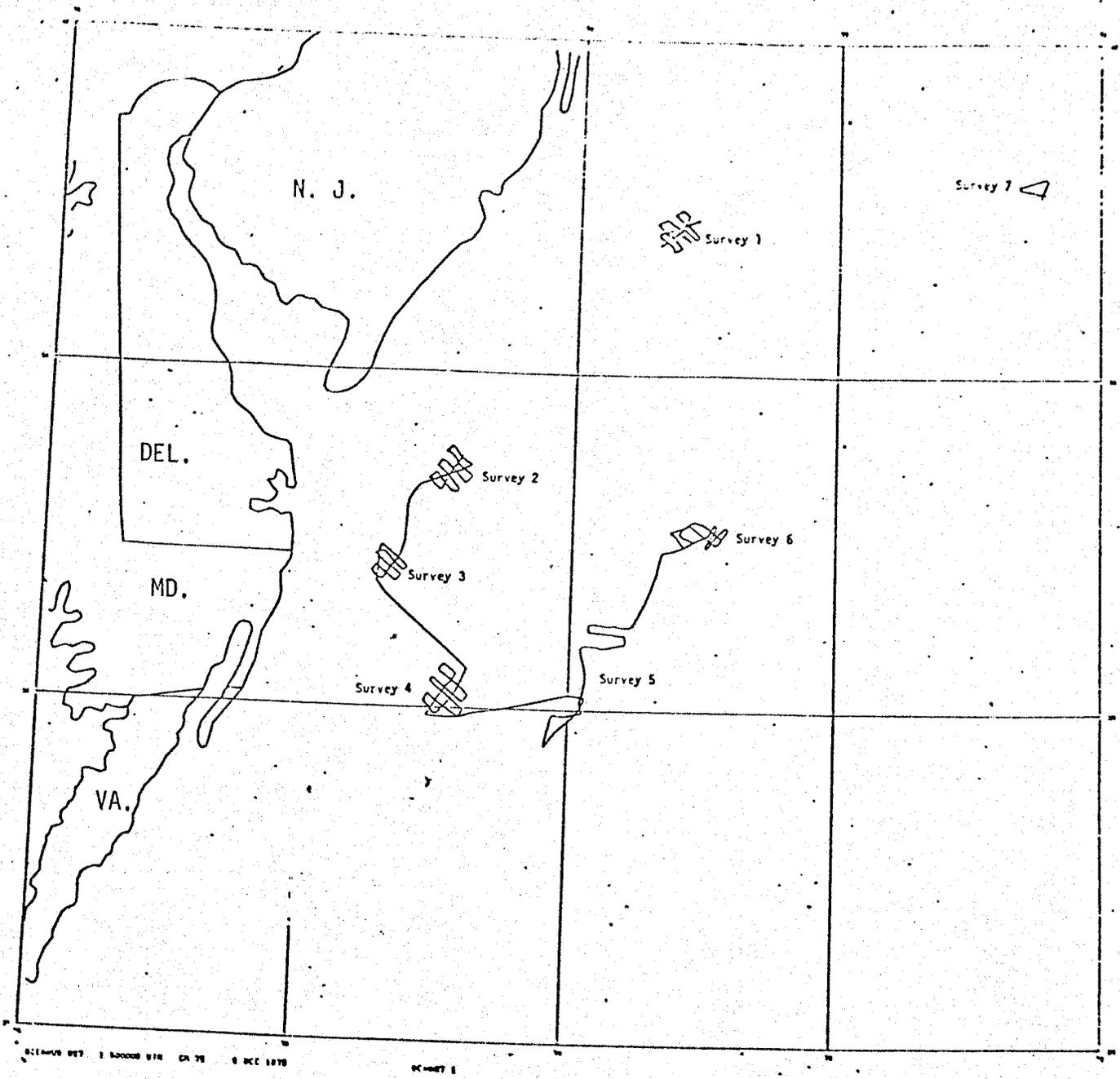


Figure 1. Computer plotted location map showing the seven detailed study areas.

Table 1. Types and amounts of geophysical data collected during the R/V OCEANUS 027 cruise.

| Survey Area | Date and Time of Survey | | Survey Length (km) | km of Data Collected | | |
|-----------------|-------------------------|-----------|--------------------|----------------------|---------|---------|
| | Begin | End | | Side-Scan | 3.5 kHz | Uniboom |
| 1 | 6/09 0522 | 6/09 2118 | 100 | 100 | 100 | 84 |
| 2 | 6/10 0113 | 6/10 1551 | 104 | 104 | 104 | 86 |
| between 2 and 3 | 6/10 1551 | 6/10 1800 | 21 | 21 | 21 | 0 |
| 3 | 6/10 1800 | 6/11 0530 | 82 | 82 | 82 | 0 |
| between 3 and 4 | 6/11 0530 | 6/11 1050 | 43 | 43 | 40 | 0 |
| 4 | 6/11 1050 | 6/12 0250 | 107 | 92 | 102 | 28 |
| between 4 and 5 | 6/12 0250 | 6/12 0900 | 53 | 53 | 2 | 46 |
| 5 | 6/12 0900 | 6/12 2320 | 116 | 116 | 88 | 116 |
| between 5 and 6 | 6/12 2320 | 6/13 0240 | 28 | 28 | 28 | 20 |
| 6 | 6/13 0240 | 6/13 1630 | 98 | 98 | 98 | 98 |
| 7 | 6/13 2305 | 6/14 0315 | 34 | 34 | 34 | 0 |
| Total | | | 786 | 711 | 699 | 478 |